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View yon embattled plain,
That lately waved so gay,
Save broken arms, and heaps of slain,
No other trophies now remain,
Of this disastrous day;
And lo! at distance from the host,
The haughty Marmion lies,
His vassals' pride, his country's boast,
Crest fallen, all his wishes crost,
His honour gone, his glory lost,
In fear and terror, passion tost,
He bleeds, he raves, he dies.

But soft as morn's all-cheering ray,
On night's dark slumbers break,
So sweet the note, so soft the lay,
That paints in nature's fair array,
The Lady of the Lake.
And see as touch'd by Naiad's hand,
Like mercy's angel prompt to save,
Her light barque leaves the shaded strand,
And shoots o'er Cat'rine's wave;
Or whilst she stops and turns to land,
All ruffled with her false alarm,
See beauty's self embodied stand,
In Ellen's faultless form.

But ah, 'tis gone, the pleasing vision's fled,
That sound so changed, so sad and slow,
That ghastly form, the cross of red,
Those imprecations deep and dread,
On the devoted recreant's head,
Betoken death and wo,
The Trosach's gorge, thick strew'd with
dead,
Proclaim that it is so.

Oh! say, whence to the aching sight,
As fixed as fate, as black as night,
Does yon dire shape appear;
Some fiend in hell's dark regions nurst,
And at his fall supremely curst,
Does from his dreary confine burst,
To plague this upper air;
But no—'tis Bertram—nor was e'er
To earth-born mortal given,
A soul so dead to love or fear,
That spurn'd at misery's hallow'd tear,
That mocked both earth and heaven.

Fell as the Sameyel's dire force,
Strikes Persia's sons with deadly glow,
And marks its withering baleful course,
With misery, death, and wo.
Let India's climes his deeds proclaim,
Let Marston field this truth declare,
And Rokeby's turrets once so fair,
Wrapt in yon bloody flame.

Sure minstrel at thy natal hour,
The spirits of the air did bow;
Young fancy op'd her inmost store,
Whilst nature cull'd her fairest bower,
To wreath thy favour'd brow.
Awake again thy magic lays,
The song of rapture pour,
Bid Scotia fired with former days,
Again from her long slumber raise,
Oh let her sleep no more.

W.

DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, AND AGRICULTURE.

Description of an Apparatus for a safe and economical Mode of burning Shavings in Workshops, and converting them to useful Purposes. By Mr. Joseph Davis, of Catharine-street, Strand.

The Silver Medal was voted to Mr. Davis for this Communication.

(From the Transactions of the Society for the encouragement of Arts, Manufactures, and Commerce.)

THE great number of manufactories destroyed by fire, in consequence of the large quantities of loose shavings,

of carpenters, joiners, cabinet and musical instrument makers, &c. in the shops, the men not liking the trouble of burning them in the common way, and it not being at all times convenient for the porters to remove them, they frequently accumulate to a dangerous extent, which was the cause of the fires at Messrs. Clementi and Co's, and at Messrs. Wilkinson and Co's, in Oxford-street.

To prevent such risks, I have tried several experiments, and have accomplished a method which far surpasses my most sanguine expectation.

The machine, for the above purpose,

is made of plate-iron, one foot diameter, sixteen inches high, in a cylindrical form, with a flat top, having a round hole in it, the size of the cover for the stove on which it is fixed, that the cover may answer for both purposes. It has an iron handle, with ears like a pail, to take it off the stove with when not wanted.

By this invention the shavings become a valuable fuel; the work can be done much superior than by coals, and the risk of fire is in a great measure done away.

I shall be happy to shew any gentleman the improvement, in use at my manufactory, in Catharine-street, Strand.

Since I had the honour of waiting on the Committee of Mechanics, I have endeavoured to ascertain the true method of the invention, by farther experiments, in the presence of a number of friends, and also of Mr. Gill, one of the Chairmen of the Committee of Mechanics, when the cylinder, 15 inches diameter and 15 inches in height, being about 7-8ths filled with shavings, burnt for more than half an hour, and produced a degree of heat much greater than from coals.

Before I discovered this means of consuming shavings, the men in the Winter season could not have the veneers, cauls, &c. ready in the workshop in a proper state to be put together till the middle of the day, which may be now done in one hour; and in the evening it was necessary to make a very large coal fire at the time the men were leaving work, that being the time they generally completed their largest glueings for the day, in order that they might have the advantage of the night to set the work, to be ready the next morning to clean off. In using a coal fire, there is not only a great risk from the shavings not being consumed, and lying about the shop, but the fire when put out with water in that state often occasions the cast iron parts of the stove to crack: the cylinder removes the danger of the one, and the inconvenience of the other, as the men can at pleasure regulate the heat, or duration of it, by putting in the shavings; as, for example, if the cylinder be one-fourth filled, it will give a strong fire for five minutes; if one-half, for fifteen minutes; if filled close, for three quarters of an hour; and when done with, the sweepings of the shop will remain burning, if not put out with water, for one hour longer. I have

one now making that will cost 10s. and with a little alteration may be applied to any stove where great heat is wanted, and if cinders or ashes be mixed with the shavings, it will burn, though not so brisk, for several hours; but requires a little more attention to prevent it from smoking, by keeping the pipe clear, and putting in small quantities.

The object of this contrivance is to employ shavings as fuel instead of coal, by such a construction of the stove, that they will not blaze away too fast, as they do in an open fire, making an intense heat, but only of a momentary duration. This is effected by putting the shavings into a sheet iron cylinder, closed at top, which is fitted into the top of a stove, very similar to those always used in such situations for burning coals; and the flame produced by the shavings passed through flues conducted in the usual manner; the air which supports the combustion being supplied through the bars of the grate.

The stove is made twelve inches wide, and one foot three inches high: it is of cast-iron, and lined with fire-tiles, having a door or fire-grate, with an ashpit beneath, in the usual manner. The sheet-iron pipe is six inches wide and four inches deep, which conveys the smoke and flame from the stove into the brick flue, and this leads into the chimney. An iron door opens into the chimney, for the sweeping machine or boy to pass through, to sweep the chimney. In the sheet-iron cylinder, the shavings are put to be consumed, which is about nine inches in diameter, and sixteen inches high; it is placed over a circular aperture in the top of the stove, and has a neck to fit in the holes of the top of the stove, to prevent the sparks of the shavings from flying out into the workshop. The cylinder is covered at top with a lid, having also a neck, which is removed at pleasure, by its handle, to put in a supply of shavings: this fits very close, and as no air can pass by it, a sufficient draught to burn the shavings, but slowly, is afforded by the air passing through the bars of the grate, which is impeded by the ashes which may be therein; but this flame may be increased to a rapid combustion when necessary, by opening the door of the stove; the flame passes along the flues, and gives an equable heat to the room. Iron bearers are fixed across the flue, which may be used to support any

work which requires drying, or for any other purpose of this kind.

The supply of this stove with fuel from shavings is attended with so little trouble, and is such an advantage to the workmen, that they will always prefer burning the shavings to coals; so much so, that where ten men are at work there is a difficulty to collect shavings sufficient even to light the fire the next morning.

By this means the danger of fire, which has been fatal to so many manufactories, is greatly removed; the loose shavings being consumed as soon as they are made, and that in lieu of more expensive fuel; and so slow are the shavings consumed, that the iron cylinder will hold enough, when crammed full, to supply the fire for upwards of half an hour. To guard the workshops still more effectually from danger, the stove and its iron flue is supported upon a mass of brick-work, which prevents any sparks, &c. from falling upon the floor; and the sides of the brick-work afford very convenient shelves on which to lay any wood-work that requires heating, drying, &c. and when a greater heat is required to extend to a considerable length horizontally, as, for instance, four or five feet, by merely putting a few shavings into the cylinder frequently, in place of filling it, they become converted into flame, which is carried the whole length of the iron flue, heating it uniformly throughout. No soot lodges in the flue, but merely light ashes, which can be easily cleared out from time to time, as may be necessary.

On the means of bringing Fruit-Trees into a bearing State, on preserving Fruit, and the proper Construction of Fruit-Rooms. By Mr. Robert Ingram, Torry.*

[From the Transactions of the Caledonian Horticultural Society.]

As the methods proposed for bringing pears into early bearing, are various, I beg leave to offer, for the consideration of the

* Mr. Ingram having at different times produced most satisfactory proofs of the efficacy of his method of keeping fruit, by exhibiting the finest pears ever seen by any member of the society, at a period of the year (7th February,) when the same kinds of pears, preserved in the ordinary way,

society, some which I have adopted, and all of which I have found to be more or less effectual.

In the first place, pear trees that grow strong and luxuriant, and which may not bear from these circumstances, I have found to be rendered fruitful by cutting their roots in the spring, when they begin to push; but this must be done with care. They must be dug round, about two feet from the stem of the tree, and got fairly under, so as to cut the leading roots; if this is done, it will in most cases bring them into bearing.

In the second place, I have found pear trees brought to bear by transplanting; and when this is to be adopted, I would recommend, that the trees should be dug all round, and all the leading roots cut, one year before lifting, and care should be taken that the roots be cut clean, and not split; for when split they are long in healing over, and do not throw off fibres so freely. When trees are to remain one year after cutting their roots, I would recommend, that the space that is dug round each tree, should be filled up with fine earth; when this is done, it will encourage the tree to make young roots, which will be found of great service to the tree when transplanted. The transplanting, I think, should take place about the end of November.

In the third place, I would recommend budding or grafting, if the trees stand in proper situations. French pears are in general the most shy to bear; and I have found that budding has brought them into bearing, and has answered better than the two former plans. I have been enabled to bring most of the kinds into bearing from three years budding, and have had from most of them a full crop, having from a dozen to a dozen and a half on each branch so budded, and the fruit much large-

would have been completely destroyed; the society resolved to bestow upon him some mark of their approbation, for his successful skill in this particular. They accordingly agreed, (10th March, 1812,) that a piece of plate, with a suitable inscription, should be presented to him. They at the same time directed the Secretary to give him thanks in the name of the society, for the offer which he has made of communicating to them the result of future experiments on this subject.